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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,384	10/17/2003	Quanyuan Shang	4432D1/DISPLAY/AKT/BG	2231

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EXAMINER

MACARTHUR, SYLVIA

ART UNIT PAPER NUMBER

1763

DATE MAILED: 06/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/688,384	Applicant(s) SHANG ET AL.	
	Examiner Sylvia R. MacArthur	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/20/2005</u> <u>2/22/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

2. Claims 1-3 rejected under 35 U.S.C. 102(b) as being anticipated by Ushikawa (WO 97/20340).

Regarding claim 1: Ushikawa (WO 97/20340) teaches a method for dechucking a substrate comprising the steps of projecting a first set of lift pins (41-43) a first distance above the surface of a substrate support and projecting a second set of lift pins (51-53) a second distance above the surface of the substrate support that is less than the first distance projected by a first set of lift pins, see the abstract.

Regarding claim 2: The second set of lifts pins are projected at a position radially inward of the first set of lift pins, see Fig. 1

Regarding claim 3: Col. 4 lines 23-36 of the English complement of WO 97/20340 which is US 6,140,256 teaches that the difference in the distance between the two sets of pins.

Claim Rejections - 35 USC § 103

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3. Claims 4-8 and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ushikawa (WO 97/20340) in view of Lenz (US 6,305,677).

The teachings of Ushikawa were discussed above.

Ushikawa fails to teach bowing.

In col.3 lines 54-67, Lenz teaches that the use of the center pins 320 and 330 (perimeters) substantially eliminate tilting, wobbling which are also known as bowing.

This teaching also suggests or deems obvious that the use of the first or second pins alone would cause bowing with the other set of pins to alleviate the stress caused by bowing.

Thus, it would have been obvious to use the two sets of pins are discussed in the aforementioned claims to perform the steps suggested in the claimed invention.

Regarding the residual attraction, col.4 lines 29-40 teaches that the perimeter pins overcomes this attraction.

4. Claims 9-13, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ushikawa (WO 97/20340) in view of White et al (US Patent 5352294).

Ushikawa discloses a support assembly comprising a support surface (Fig 6A-6E and Fig 1- 3a), two independent sets of lifting pins, first set of lift pins comprising three pins (Fig 6A-5), a second set of lift pins positioned radially inwards of the first set with two lift pins positioned opposite a center of the support assembly (Fig 6C-4) disposed inside a chemical vapor deposition chamber (See the Abstract), radially inward pins extended lower (Col 4 lines 23-36), the substrate could be supported by all lift pins simultaneously when bowed by inner pins extending lower.

Ushikawa does not disclose a lift plate.

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White et al disclose a pin support plate (Fig 3-122) for lifting the pins and a rim projecting from the central position (Fig 8-20).


The motivation to modify the apparatus of Ushikawa with that of White et al is that replacing two sets of lift mechanisms by one lift plate like that of White et al to make the lift mechanism simpler, reliable and economical.

There fore it would have been obvious to one having ordinary skill in the art at the time invention was made to replace two sets of lift mechanisms by one lift plate like that of White et al to make the lift mechanism simpler, reliable and economical.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R. MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-F during the core hours of 9 a.m. and 3 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sylvia R MacArthur
Patent Examiner
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June 13, 2005